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From	**To**
David Albright/R9/USEPA/US	Adam Freedman/R9/USEPA/US, George Robin/R9/USEPA/US
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Description	Form Used: Memo
Subject	**Date/Time**
Fw: Blow-Out Prevention Permit Language	

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----- Forwarded by David Albright/R9/USEPA/US on 02/01/2010 09:57 AM -----

From: "Chan, Victor M." <VMChan@SolanoCounty.com>
To: Adam Freedman/R9/USEPA/US@EPA, "Ferrario, Nedzlene N." <NNFerrario@SolanoCounty.com>, "Leland, James H." <JHLeland@SolanoCounty.com>
Cc: David Albright/R9/USEPA/US@EPA, George Robin/R9/USEPA/US@EPA, "Kaltreider, Misty C." <MKaltreider@solanocounty.com>, "Serrano, Ricardo" <RSerrano@SolanoCounty.com>, "Schmidtbauer, Terry" <TSchmidtbauer@SolanoCounty.com>, "Geisert, Matthew" <MGeisert@solanocounty.com>
Date: 02/01/2010 09:35 AM
Subject: RE: Blow-Out Prevention Permit Language

Adam

Since I was an ex-nuclear engineer, you should be aware that failure of a complex engineered system involves:

(1) Failure in design – An independent QA design review is normally conducted to ensure every part is designed to meet the pressure requirements with the appropriate design safety factor.
(2) Failure in material procurement – A certification program is sometimes needed to ensure the material meets design specs. This will avoid using substandard material that does not meet design reqm'ts.
(3) Failure in installation or workmanship – This becomes important if on-site welding or poor construction procedure is performed on concrete without proper QA inspection.

Based on the language of your permit, the US EPA is wholly dependent on the best engineering practices of Shell Oil on CO2 injection. This is normal practice when you don't have a past major failure.

However, when a major failure does occur, a failure analysis will determine which of the three failures is involved and then develop standards to prevent the failure from happening again. Standards are already in place for the nuclear engineering industry, commercial airline industry and NASA because major failures have occurred. However, I don't see similar standards are in place in CO2 injection simply because we have yet to have a major failure. Another example: Toyota accelerator problem is likely a design failure rather than (2) and (3) and therefore a design modification will be required.

Hence, we have a major decision to make. Are the current standards for CO2 injection sufficient?

Bottomline: If the US EPA willing to sign an MOU with Solano County stating that the current standards and industry practices are sufficient, then this will streamline the Use Permit process at Solano County.

Victor M Chan, PE, BCEE
Solano County Environmental Engineer www.aaee.net

707-784-3177

From: Freedman.Adam@epamail.epa.gov [mailto:Freedman.Adam@epamail.epa.gov]

Sent: Friday, January 29, 2010 5:02 PM

To: Chan, Victor M.; Ferrario, Nedzlene N.

Cc: Albright.David@epamail.epa.gov; Robin.George@epamail.epa.gov

Subject: Blow-Out Prevention Permit Language

Victor and Ned,
I wanted to show you how our current permit language addresses blow-out prevention (BOP), as I noted that your information request of Shell includes specifics pertaining to their BOP design. The language is draft and submit to change during our permit writing process.

1. Drilling, Work-over, and Plugging Procedures

Drilling, work-over, and plugging procedures must comply with the CDOGGR "Onshore Well Regulations" of the California Code of Regulations, found in Title 14, Natural Resources, Division 2, Department of Conservation, Chapter 4, Article 3, Section 1722-1723. Drilling procedures shall also include the following:

(a) Details for staging long-string cementing or justification for cementing without staging;

(b) Records of daily Drilling Reports (electronic and hard copies);

(c) Blowout Preventer (BOP) System testing on recorder charts including complete explanatory notes during the test(s),

(d) Casing and other tubular and accessory measurement tallies; and

(e) Details and justification for any open hole gravel packing.

The "Onshore Well Regulations" that we cite in our permit may be found at ftp://ftp.consrv.ca.gov/pub/oil/regulations/PRC04.PDF -- and the applicable language is on page 29, with specific guidances on design found in DOGGR publication No. MO 7, as noted below.

1722.5. Blowout Prevention and Related Well Control Equipment.

Blowout prevention and related well control equipment shall be installed, tested, used, and maintained in a manner necessary to prevent an uncontrolled flow of fluid from a well. Division of Oil, Gas, and Geothermal Resources publication No. MO 7, "Blowout Prevention in California," shall be used by Division personnel as a guide in establishing the blowout prevention equipment requirements specified in the Division's approval of proposed operations.

Please let me know if you have any further questions and I would be happy to discuss them.

Adam Freedman
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